

The assessment of the uses and results from the various Internet funding programs as reported in this study can:

- Identify key policy issues related to the digital divide, particularly Universal Service and equitable access to networked information resources and services in the United States;
- Provide an assessment of the roles public libraries play in closing the digital divide, and the impact of those roles on the communities the libraries serve;
- Provide a sense of the impacts and benefits communities derive from public library Internet connectivity and services;
- Identify the role of E-rate discounts and other funding sources in library services and technology planning activities;
- Provide a better understanding of how these awards are being used by libraries;
- Provide a better understanding of the E-rate application and disbursement process;
- Assist policy makers to determine how best to refine various Universal Service policy goals through programs such as the E-Rate and LSTA in relation to the digital divide; and
- Assess the relationship between various funding programs and Internet services.

The findings offer lessons from the various public library Internet programs that can continue to improve overall public library connectivity, services, and use of the Internet – at the local, state, and national levels.

In addition, study results can be used to fine-tune future program activities to improve the impact and success of the program. Products from this study can also be used to maximize the impact from federal funding for public libraries. The funding programs and initiatives are simply too important *not* to study their impacts and benefits. If the nation is to be successful in the global networked information environment, it is essential that public libraries and the residents they serve obtain the maximum benefits possible from these programs.

CHAPTER 2: BACKGROUND

The term "digital divide" distinguishes between those who have access to and can effectively use new information technologies and those who do not.¹¹ A goal of those seeking to reduce the digital divide is that every person has access to these new technologies when and where they need them and has understanding of how to use these tools effectively. An interim step is to equip community institutions such as public libraries with Internet access and trained staff. This chapter provides brief background information on the digital divide and the three major library-oriented national-level external funding sources that seek to reduce it: the Library Services and Technology Act (LSTA) funding, E-rate, and the Bill and Melinda Gates Foundation Library Program.

The Digital Divide

"Digital divide"¹² is a phrase initially used in 1995 by the Department of Commerce's National Telecommunications and Information Administration (NTIA) to describe the existence of "haves" and "have nots" in the networked environment. NTIA, through its 1995 report *Falling Through the Net: A Survey of the "Have Nots" in Rural and Urban America*, demonstrated that there were clear differences in access to technology (e.g., computers, computers with modems) across households by race, income, education, and geographic location. Indeed, minority households, households with less than the median income, households with non-college-educated individuals, or households located in rural areas were less likely to have computers in the home.

The NTIA (U.S. Department of Commerce, National Telecommunications and Information Administration, 1998) report identified "profiles of the least connected" as rural poor, rural and central city minorities, young households, and female-headed households. The report concludes (p. 6):

An increasing number of Americans have become connected to the Information Superhighway in the last three years.... Nevertheless, significant segments of the population still remain unconnected by telephone and/or computer.... Because it may take time before these groups become connected at home, it is still essential that schools, libraries, and other community access centers (CACs) provide computer access in order to connect significant portions of our population.

Clearly, public organizations, such as public libraries, would need to provide the Internet connection until access to the net from home was possible.

The NTIA (U.S. Department of Commerce, National Telecommunications and Information Administration, 1999) report defined the "digital divide" as "the divide between those with access to new technologies and those without" (1999, p. xii) and considers the digital

¹¹ Basic guides to digital divide resources can be found at: American Library Association, Benton Foundation, Boucher, Chu (2000), Goggle, Hoffman & Novak, and Yahoo.

¹² For additional resources see Ryan, Joe. *Information resources for information professionals: digital divide*. <<http://web.syr.edu/~jryan/infopro/divide.html>>.

divide to be “one of America’s leading economic and civil rights issues” (1999, p. xii). The NTIA report (1999, p. xiii) found that:

- Households with incomes of \$75,000 and higher are more than twenty times more likely to have access to the Internet than those at the lowest income levels, and more than nine times as likely to have a computer at home;
- Whites are more likely to have access to the Internet from home than African Americans or Hispanics have from any location;
- African American and Hispanic households are approximately one-third as likely to have home Internet access as households of Asian/Pacific Islander descent, and roughly two-fifths as likely as White households; and
- Regardless of income level, Americans living in rural areas lag behind in Internet access.

Thus, there is a discrepancy in access to network-based technologies by race, income, and geographic location.

A key issue raised again in the NTIA (U.S. Department of Commerce, National Telecommunications and Information Administration, 1999) report is the role of the community access centers (CACs) – defined as schools, libraries, and other public access points – in ameliorating the digital divide. It is important to consider the role, ability, and potential of CACs in the digital divide. It is clear that the digital divide will not simply disappear over time without effort on the part of various community-based organizations, including public libraries. Indeed, the 1999 NTIA report states that “for many groups, the digital divide has widened as the information “haves” outpace the “have-nots” in gaining access to electronic resources” (p. xiii).

The NTIA (U.S. Department of Commerce, National Telecommunications and Information Administration, 2000) report found that 51% of all U.S. homes had a computer and 41.5% of all U.S. homes had Internet access. Internet access by race was: Asian American & Pacific Islander (56.8%), White (46.1%), Hispanic (23.6%) and African American (23.5%) households. Internet access by income was \$75,000+ (86.3%) while households \$15,000 or below (12.7%). 65% of college graduates have Internet access compared to 12% of households headed by those with less than a high school education. Internet access by rural/urban location was: 42.3% urban 38.9% rural and 37.7% central city. When outside the home Internet access was: work (62.7%) K-12 schools (18.9%), other schools (8.3%), libraries (9.6%) community centers (.5%) at Community Centers, and someone else’s computer (13.8%).

Public Library Internet Connectivity and the Digital Divide

In this mix, it is important to assess the role that public libraries play in the digital divide, as well as the use of external, national-level funding to support public library involvement with and use of the Internet. Recent research by the authors shows that 95.4% of public library outlets provide public access Internet services (Bertot and McClure, 2000). Of those outlets that do provide public access Internet services, each outlet has an average of 8.3 graphical workstations – but rural libraries have an average of 4.9 workstations as compared to an average of 17.3 in urban libraries. Moreover, 25.3% of rural public libraries connect to the Internet via a dial-up 56kbps modem. The same study shows that 62.1% of library outlets with 20-40% poverty and

69.6% of library outlets with more than 40% poverty designations make use of the E-rate discount to support their Internet connectivity services.

Public library Internet connectivity, while improved substantially since 1998 (Bertot and McClure, 1999), still requires external support, especially in terms of higher bandwidth to provide adequate access to Internet-based technologies to the public.

Key Components of Federal Funding of Public Libraries

The first unit within the federal government devoted to libraries was the Library Services Division created in 1938 as a part of the Office of Education at that time a part of the Interior Department.¹³ The first large-scale federal program supporting public libraries was the Library Services Act (LSA) (P.L. 84-597) passed on June 19, 1956. The focus of the legislation was extending or enhancing rural public library services.

The February 11, 1964 Library Services and Construction Act (LSCA) (P.L. 88-269, 20 USC 351 *et seq.*) merged LSA mandates with the addition of funding for urban public libraries and public library construction (Title II). LSCA re-authorization legislation added specialized State library services (to state institutions and the handicapped) and interlibrary cooperation (Title III) in 1966.¹⁴ The LSCA re-authorizing Act (P.L. 95-123) passed on October 7, 1977 required state or non-federal matching funds. The LSCA legislation in its final years had six titles: public library services, library construction, interlibrary cooperation, Native American library support, foreign language materials acquisition, and library literacy.

Table 2.1 summarizes key federal legislation related to public library funding.

¹³ For a history of this period in federal – library affairs see Molz (1984) and Raber (1995).

¹⁴ For a history of LSCA from 1964-1981 see Holley & Schremser (1983). Molz (1990, 10-12) supplies a helpful legislative chronology (Table I) covering the period 1956-1988 and a summary of LSA/LSCA appropriations 1957-1989.

Table 2.1 Brief Legislative History of Federal Support of Public Libraries.

Date	Action
1938	Library Services Division created as part of the Office of Education at that time a part of the Interior Department.
June 19, 1956	Library Services Act (LSA) (P.L.84-597) passed. The first large-scale federal program supporting public libraries, subsidizes rural (less than 10,000) public libraries using state libraries as administrator. Act continued in effect until 1964 with extensions of no more than 5 years with appropriations determined annually.
February 11, 1964	Library Services and Construction Act (P.L.88-269, 20 USC 351 <i>et seq.</i>) merged LSA mandates with the addition of funding for urban public libraries and public library construction (Title II). Continues LSA funding approach with extensions of no more than 5 years with appropriations determined annually.
July 19, 1966	Interlibrary loan cooperation (Title III), library services to institutions (Title IVA) and the physically handicapped (Title IVB) added to LSCA (P.L.89-511).
November 24, 1967	Added a provision under construction title (II) allowing libraries to obtain LSCA funding to acquire existing buildings and renovate (P.L.90-154).
December 30, 1970	Adds programmatic emphasis to include low-income families. Consolidates Titles I, IVA and IVB. Adds support for metropolitan libraries serving as regional or national resource. Strengthens support for state libraries. Removes matching requirements for interlibrary loan cooperation. (P.L.91-600)
July 20, 1970	Act (110 Stat. 3009, P.L.91-345, 20 USC 34 < http://www.ncelis.gov/about/background/uscode.html >) established the U.S. National Commission on Libraries and Information Science (NCLIS) < http://www.ncelis.gov/ >. Amended August 14, 1991 (P.L.102-95, < http://www.ncelis.gov/about/background/pl102-95.html >), September 30, 1996 (P.L.104-208, < http://www.ncelis.gov/about/background/pl104-208.html >).
May 3, 1973	Older American Comprehensive Services Amendments (P.L.93-29) amends LSCA to add (Title IV) Older Readers Services but title was not funded.
October 19, 1973	National Foundation on the Arts and Humanities Amendments (P.L.93-133) amends LSCA to include research libraries meeting certain criteria.
August 21, 1974	Education Amendments of 1974 (P.L.93-380) adds programmatic emphasis to include limited English speakers.
October 7, 1977	LSCA re-authorizing Act (P.L.95-123) requires federal funds spent for administration to have state or non-federal matching funds; adds emphasis on major urban libraries.
October 17, 1984	Beginning in 1984 there was a shift in intent toward funding use of information technology by libraries. Adds services for Native Americans. Adds emphasis on librarian training and providing literacy training for adults (P.L.98-480).
1996	Telecommunications Act of 1996 (110 Stat. 56, P.L.104-104) Funds the E-rate program that provides advanced telecommunications and information technologies and services to schools and public libraries at a discount rate.
September 30, 1996	The Omnibus Consolidated Appropriations Act of 1997 (110 Stat. 3009, P.L.104-208, H.R. 3610) Section 101(e), title VII: Museum and Library Services Act of 1996 < http://www.ims.gov/whatsnew/leg/leg_mlsa.pdf > Subtitle B: Library Services and Technology Act (LSTA). Consolidates 8 LSCA titles (4 unfunded) to two broad LSTA priorities: first, use of technology for information sharing among libraries, and between libraries and other community services and second, making library resources more accessible to urban and rural localities, and to low-income residents and others who have difficulty using library services. Continues LSA and LSCA funding approach with maximum extensions of 5 years with annual appropriations.
December 1, 1997	Museum and Library Services Technical and Conforming Amendments (P.L.105-128, S. 1505) makes minor corrections. The text of the Act as amended is 20 USC 9101.

What is LSTA State Library Agencies Funding?

LSCA became the present day Library Services and Technology Act (LSTA) funding in 1996. The Museum and Library Services Act of 1996 (P.L. 104-208, H.R. 3610) <http://www.ims.gov/whatsnew/leg/leg_mlsa.pdf> and its LSTA section was part of the Omnibus Consolidated Appropriations Act of 1997 enacted on September 30, 1996 and amended on December 1, 1997 by the Museum and Library Services Conforming and Technical Amendments of 1997, (PL 105-128). The text of the Act as amended is 20 USC 9101. Library Services and Technology Act (LSTA) funding began in 1998. Funds go to Secretary of Education who transfers them to Institute of Museum and Library Services. This arrangement retains the House, Labor Health and Human Services, Education Appropriations Subcommittee jurisdiction over library appropriations.

LSTA built on the strengths of previous federal library programs, notably LSCA with some major differences. LSTA:

- Moved the responsibility for the administration of the program from the Department of Education to a newly created independent federal, executive branch, agency, the Institute of Museum and Library Services (IMLS);
- Re-focused the program on two key priorities (section 231): establishing or enhancing electronic linkages among or between libraries, and targeting library and information services to persons having difficulty using a library and to under-served urban and rural communities, including children (from birth through age seventeen) from families with incomes below the poverty line;¹⁵
- Dropped "bricks and mortar" library construction. Only minor wiring or lighting adjustments are allowed. No building renovations like ramps and doors are allowed even if they are to help meet Americans with Disabilities Act requirements;
- Dropped separate title for literacy funding. The Elementary and Secondary Education Act (ESEA) picked up some of this effort particularly as part of its Head Start and Even Start programs. States can use LSTA funds for literacy programs if it is a designated priority;
- Expanded the types of libraries that could participate in the program beyond public libraries (section 212) to include, school, academic and private research libraries;
- Continued to stress library services to people of diverse geographic, cultural, and socioeconomic backgrounds, to individuals with disabilities, and to people with limited functional literacy or information skills;
- Retained the successful State library-based approach to administering the program, further streamlining and simplifying program administration without sacrificing accountability and evaluation; and

¹⁵ The broader mandate remained in Section 212, "the purposes of the act are to stimulate excellence and promote equity and lifelong access to learning and information resources in all types of libraries; to stimulate improvement and innovation in library services through public-private sector partnerships; to establish national library service goals for the 21st century that will: provide access to information through international electronic networks; help contribute to a productive work force, develop reading and critical thinking for children and adults, provide targeted services to people of diverse geographic, cultural and socioeconomic backgrounds, to individuals with disabilities, and to people with limited functional literacy or information skills; to provide adequate hours of operation, facilities, staff, collections, and electronic access to information."

- Continued emphasis on public libraries, but encouraged interlibrary cooperation and productive partnerships throughout the entire act, allowing much more flexibility.

LSTA allows funding to go to all types of libraries including academic, public, school and special. The only libraries that cannot receive LSTA funds are federal or for-profit libraries.

LSTA emphasized the role of libraries as change agents, implementers of equity, as self-help institutions and community partners in lifelong learning and literacy, as economic developers, and as organizers and providers of basic information in such areas as employment, health, law and government services.

Federal funding for libraries has never been certain and is always determined year-to-year. The Library Services Act and its descendants: Library Services and Construction Act (LSCA) and Library Services and Technology Act (LSTA), are among the longest running entitlement acts authorized. Every several years, most recently this has been every five years, Congress reviews and re-authorizes the act. Congress determines the amount of funding for the act on an annual basis. Thus the amount of the principal source of federal funding for libraries is determined year-to-year adding additional uncertainty to library planning efforts.

Institute of Museum and Library Services (IMLS) Role

The Institute of Museum and Library Services (IMLS) <<http://www.ims.gov/>> administers LSTA funding.¹⁶ IMLS administers a number of programs supporting libraries of all types, museums and library-museum partnerships. These programs include: National Leadership Grants (NLG) for Libraries (categories include: Preservation or Digitization of Library Materials; Education and Training; and Research and Demonstration), National Leadership Grants for Library-Museum Collaborations, Native American Grants, Native Hawaiian Grants and the Grants to State Library Agencies. The focus of this study is the Grants to State Library Agencies program and the use of this funding to assist public libraries (although other types of libraries may also use this funding source). The annual allotment of LSTA funds is as follows:

- 91.5% or more allotted to states via Grants to State Library Agencies;
- 3.75% for National Leadership Grants;
- 1.75% for Native American and Native Hawaiian Grants; and
- 3% limit allowed for federal level administration.

¹⁶ For an early report see Frankel (1998) and the 1997-1998 IMLS annual report <<http://www.ims.gov/pubs/pdf/pubannrp.pdf>>. For legislative intent see: U.S. Congress. Senate. Committee on Labor and Human Resources. (1995, August 30). Arts, humanities, and museums amendments of 1995 (Senate Report 104-135), Washington, DC: G.P.O. Y1.1/5:104-135.

Table 2.2 LSTA/IMLS Library Program Appropriations.

Year	Grants to St. Lib. Agencies	NLG Lib. & Lib./Museum	Native American/HI	Total
1998	135,466,990 (146,340,000 request)	5,487,750	2,560,950	143,515,690
1999	135,366,938 (154,500,000 request)	25,000,000**	2,908,063	163,275,001
2000	138,118,000 (173,000,000 request)	22,025,837**	2,616,000	162,759,837
2001	148,939,000 (168,078,000 request)	50,550,000**	2,940,000	202,429,000
Total	557,890,928	103,063,587**	11,025,013	671,979,528

*1997 no allotment. Total LSTA funds spent by IMLS to administer grant programs is \$14,235,919.

**Includes additional funds for Congressionally directed grants in excess of the LSTA formula.

The Grants to State Library Agencies offers population-based formula funding to the states. Table 2.2¹⁷ summarizes appropriations to the library program to date.

State Level Administration of LSTA Grants to State Library Agencies Funds

Each state is required to develop its own priorities and guidelines for grant allocation based on those outlined in the LSTA legislation. The State library administrative agency is the administrator of these funds directing them to statewide services or awarding sub-grants to libraries within the state. All types of libraries qualify for LSTA funds except federal or for-profit libraries. The following highlight basic program requirements:¹⁸

- Minimum allotment for each state is \$340,000 with remainder on a per capita basis;
- 4% of the funds may be used for state-level administration;
- One-third matching required from nonfederal, state, or local sources;
- Maintenance of effort (MOE) on state-level expenditures for similar purposes. The allotment to the state is reduced by % MOE less than the average of the last three years. A State library may request a waiver of MOE for exceptional or uncontrollable circumstances;
- Submission by the State library administrative agency of a five-year state plan and assurances to the director of IMLS. Plan requirements and assurances are summarized in Appendix A. Highlights include: revisions to the state plan are allowed (submitted by April 1 of the fiscal year preceding the fiscal year for which the changes are to take effect); the plan must be publicly available; and be developed with library/library user input;
- Broadly representative state advisory council permitted, not required; and
- Independent evaluation/report required prior to the end of the five-year state plan.

The State library is the usual administrator of these funds, directing them to local public libraries within the state.

¹⁷ Assembled from IMLS press releases and IMLS staff personal communication.

¹⁸ From the 5-year LSTA Plan for 1998-2002 and IMLS staff personal communication.

LSTA Grants to State Library Agencies Works at the Local Public Library Level

The distribution of LSTA Grants to State Library Agencies funds by the State library to local libraries may be done in a variety of ways. Roughly twenty states divide the LSTA funds received in two ways: statewide library programs and via competitive grants to libraries. In many of these states, about half of the LSTA funds received go to statewide library programs and the other half to competitive grants to libraries. Statewide LSTA initiatives are announced by the State library using a variety of mechanisms including: direct mail, State library sponsored listserv, conferences and workshops and by phone.

General requirements to participate may include being eligible to receive state aid. Often the State library will assist public libraries to meet additional requirements if necessary. Competitive grants are awarded once a year on an annual basis, in general. The State library will identify areas of interest, develop application forms and procedures and alert local libraries regarding competitive grant availability.

What Is E-Rate?¹⁹

The Universal Service Fund was created in 1993 to ensure that all Americans could afford telephone services. Local and long-distance telephone companies must contribute to the fund. The purpose of the fund was broadened with legislation in 1996. The Schools and Libraries Universal Service Fund, commonly known as the "E-rate," became law in February 1996 as part of Public Law 104-104, the Telecommunications Act of 1996 (TCA). The 1996 legislation built on the goals of the 1934 Communications Act *"to make available, so far as possible, to all the people of the United States, a rapid, efficient nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges."*

The TCA provided for a range of sweeping reforms of the telecommunications industry. Equally important, however, were the provisions of the legislation that provided a policy basis for the promotion of Universal Service as part of the National Information Infrastructure (NII). The TCA set into legislation the notion of universal service for the networked environment. That is, the TCA shifted the debate from telephone services to network services being "core" services to which citizens should have access through the universal service principles presented in section 254b of the legislation:

- **Quality and rates:** Quality services should be available at just, reasonable, and affordable rates.
- **Access to advanced services:** Access to advanced telecommunications and information services should be provided to all regions of the Nation.
- **Access in rural and high cost areas:** Consumers in all regions of the Nation, including low-income consumers and those in rural, insular, and high cost areas, should have access to telecommunications and information services . . . that are reasonably comparable to those services provided in urban areas and that are available at rates that are reasonably comparable to rates charged for similar services in urban areas.

¹⁹ There have been a number of other E-rate evaluation studies not specifically focused on libraries including: Carvin (2000), EdLiNC (1999), and Puma, et al. (2000).

- **Equitable and nondiscriminatory contributions:** All providers of telecommunications services should make an equitable and non-discriminatory contribution to the preservation and advancement of universal service.
- **Access to advanced telecommunications services for schools, health care, and libraries:** Elementary and secondary schools and classrooms, health care providers, and libraries should have access to advanced telecommunications services as described in subsection (h).
- **Additional principles:** Such other principles as the Federal-State Joint Board and the Commission determine are necessary and appropriate for the protection of the public interest, convenience, and necessity and are consistent with this Act.

In its May 1997 ruling, the Federal Communications Commission (FCC) and Joint Board added the principle of *Technology Neutral*. The intent of this principle is for the universal service process of the FCC and Joint Board not to promote the attainment of universal service through any particular telecommunication technologies.

To promote access to the Internet, the universal service provision of the TCA specifically directed the FCC to create a discount structure for telecommunications services for schools, libraries, and rural health care institutions. Based on the broad principles established by the TCA, the FCC issued its final universal service rule making in May 1997. In this ruling (Federal Communications Commission, 1997, Section X), the FCC created the following:

- \$2.25 billion annual Universal Service Fund (USF) for schools and libraries and a
- Telecommunications discount structure ranging from 20%-90% for telecommunications services. The discount rate a school or library can receive depends on the percentage of students eligible for the national school lunch program at the nearest school and its urban/rural location. See Table 2.4 Schools and Libraries Discount Matrix below for the discount rates.

The universal service provisions of the TCA, and the FCC implementation of those provisions, are aimed specifically at increasing the level of connectivity of schools and libraries to the Internet. In doing so, the FCC established that "core" connectivity (those items which will receive discounts) includes telecommunications services (e.g., leased-lines), internal connections (e.g., routers, modems, cabling for buildings) and Internet access. The FCC created the Schools and Libraries Corporation (SLC), now renamed the Schools and Library Division (SLD) <<http://www.sl.universalservice.org/>>, to oversee the USF implementation.

With the passage of the Telecommunications Act of 1996 (TCA) and the Federal Communications Commission's subsequent implementation of the E-rate, the Universal Service fund was expanded in 1997 to support telecommunications services at schools and libraries. The E-rate program provides all public and private schools and libraries (and certain consortia of eligible institutions) discounted access to affordable commercial telecommunications services, Internet access and internal network connections. Discounts range from 20 percent to 90 percent, depending on economic need and location (urban or rural).

Brief Program History

The Federal Communications Commission (FCC), following passage of the 1996 legislation, established the Federal-State Joint Board on Universal Service to obtain public input on how the program should be operated. The FCC adopted the Board's recommendations after much debate between industry and representatives of schools and libraries. A principal recommendation of the Board was the creation of the Schools and Libraries Corporation (SLC) to implement the program. The SLC opened the first period of E-rate applications on January 30, 1998, receiving more than 30,000 applications involving requests for a total of more than \$2 billion.

GTE, BellSouth, and SBC Communications filed lawsuits (later consolidated into a single legal proceeding) in 1998 seeking to block implementation of the E-rate by the FCC. The litigants claimed that the E-rate represented an illegal tax because phone companies were forced against their will to pay into the Universal Service Fund, and that the FCC had unfairly excluded Internet providers from paying into the Fund. This debate soon spilled over into Congress with members charging that the FCC had exceeded its authority by creating a private corporation to administer the E-rate, and raising concerns about the inclusion of internal building wiring among services that would be eligible for E-rate subsidies. Subsequently, AT&T, MCI, and Sprint began charging customers a "universal service" fee on their phone bills setting off increased Congressional and public debate over the E-rate. The Consumers Union and the Consumer Federation of America joined the opposition claiming the E-rate represented an "unfair price hike" for consumers. At the same time, the General Accounting Office (GAO) released a report concluding that the FCC had indeed violated the 1945 Government Corporation Control Act by establishing a corporation without explicit Congressional approval.

The FCC's response to the controversy was to announce in June 1998 that it would scale back the planned funding cap from \$2.25 billion to \$1.9 billion, and would spread the funding over a longer "first year" period of 18 months, thereby extending it through June 1999. The lengthening of the time period was also intended to align the E-rate with the regular school year. Concurrently, the General Accounting Office (1998, 1999) issued reports criticizing the management oversight of the program. GAO's criticisms led to the FCC's decision to abolish the SLC and to create the new School and Libraries Division (SLD) as part of the Universal Service Administrative Company (USAC). The net affect of this for public libraries was twofold. It delayed receipt of any E-rate discounts (indeed, Year 1 discounts did not actually reach libraries and schools until 1999), and it caused many libraries to have to re-negotiate with vendors the fees for discounted services due to the lag time between discount applications and actual awards.

SLD issued the first wave of E-rate commitments in November 1998. E-rate applications in Year 2 increased by 7 percent Year 1 of the program. BellSouth and SBC withdrew from the federal lawsuit, leaving only GTE as a litigant. The 5th Circuit Court of Appeals in July 1999 refused to uphold GTE's complaint, and the U.S. Supreme Court refused to hear the litigant's appeal in May 2000. The SLD announced plans to fully fund the second round of applications in October 1999. The Year 3 applications exceeded the combined requests from the first two years of program operations. Table 2.3 summarizes library participation in the E-rate program.²⁰

Table 2.3 Library Participation in E-rate Program.

E-rate Year	Total # of applicants	# of Library applicants	% of library to total applicants	Total E-rate awarded	Total awarded to libraries	% awarded to libraries
Year 1 1/1/98-6/30/99	25,930	4,705	18.15%	\$1.66 billion	\$68,155,381	3.93%
Year 2 7/1/99-6/30/00	29,961	4,746	15.84%	\$2.0 billion	\$61,235,484	3.06%
Year 3 7/1/00-6/30/01	26,324	4,507	17.12%	\$2.1 billion	\$65,753,762	3.12%

New regulations under the Children's Internet Protection Act (CIPA) and the Neighborhood Internet Protection Act (NCIPA)²¹ were proposed and were about to go into effect for those receiving E-rate funding at the time of the site visits for this study. The revised regulations required those receiving E-rate funding to have in place an Internet use policy and have installed filters on Internet workstations. The proposed federal requirement generated widespread debate in the library community.

E-rate Program Operations

Table 2.4²² summarizes the E-rate discount based on poverty level and location. Eligible libraries may receive discounts on eligible telecommunication services ranging

from 20 percent to 90 percent, depending on economic need and location (urban or rural). The SLD bases the level of library discount (i.e., libraries pay less than market cost to obtain eligible equipment and services) on the poverty level of the library's school district. The SLD bases the level of school discount on the percentage of students eligible for participation in the National

²⁰ Data drawn from Universal Service Administrative Company. (2000). Funding commitments by rural/urban statistics and entity type. *Annual report*. p. 38. <<http://www.universalservice.org/reports/2000/>>. See also Puma, Chaplin & Pape (2000).

²¹ The Children's Internet Protection Act (CIPA) and the Neighborhood Internet Protection Act (NCIPA) were incorporated into a major spending bill (H.R. 4577) on December 15, 2000 and signed by the President on December 21, 2000 (P.L.106-554). The Acts restrict use of LSTA, Title III of the Elementary and Secondary Education Act, and E-rate funding. For further information see American Library Association (ALA). Washington Office. CIPA & NCIPA legislation. <<http://www.ala.org/cipa/legislation.html>> and ALA. CIPA web site. <<http://www.ala.org/cipa/>> and Wisconsin Department of Public Instruction. (2002).

²² From *Schools And Libraries Universal Service Fund E-rate fact sheet*. <<http://www.ed.gov/Technology/eratefacts.html>>.

School Lunch Program or other federally approved alternative mechanisms contained in the Elementary and Secondary Education Act (ESEA).

Table 2.4. Schools and Libraries Discount Matrix

How Disadvantaged? % of students eligible for the national school lunch program	Discount Level	
	Urban Discount Level	Rural Discount Level
Less than 1%	20%	25%
1% - 19%	40%	50%
20% - 34%	50%	60%
35% - 49%	60%	70%
50% - 74%	80%	80%
75% - 100%	90%	90%

Eligible libraries may participate as part of multiple E-rate applications and can apply for discounts as part of a consortium. A consortium may include both eligible and ineligible (private, for-profit) entities that are not entitled to a discount. Ineligible members of a consortium may benefit from lower *pre-discount* prices from market aggregation. Consortia members may benefit from aggregating demand, better ability to negotiate lower prices, improved efficiency, shared infrastructure and technical support.

SLD disburses E-rate discount payments directly to the vendors providing technology or services to the approved libraries (and consortia). The vendor payments discount the bill charged to the library. The payments can pay for the following types of service: commercial telecommunications services (basic local and long-distance phone services), internal connections (including installation of equipment to provide network wiring within library buildings), and Internet access. The largest share of E-rate funds, 58 percent, supported the acquisition of equipment and services for internal building connections, while 34 percent supported telecommunications services, and eight percent supported the cost of Internet access (Puma, Chaplin & Pape, 2000, p. xi). Discounts cannot pay for computer hardware, software and staff training.

Even if a library is eligible, it may not be funded in any given funding year due to overall funding shortfalls. Funding decisions by the SLD are made in waves within each funding-cycle beginning with those institutions eligible for the highest discounts and with the most basic services (e.g., basic telephone). Waves of funding continue until all requests are met or until the budget is depleted. The SLD prioritizes applications based on the level of discount (higher discounts are given higher priority) and the type of services requested. For example, of those libraries requesting internal connections (i.e., connections within libraries and to workstations) in Year 1, SLD funded only those eligible libraries with discounts of 70 percent and above.

E-rate Application Process

The E-rate application process consists of six basic steps that all participants must follow:

1. ***Prepare a technology plan that meets SLD criteria.*** The SLD rules require the library develop a three-year technology plan to address: How information technology can help libraries achieve a vision for an improved library? What telecommunications services, hardware, software, facility upgrades, maintenance, and support services will libraries need to reach their goals? How will library staff learn to use networked information technologies for improved library services? In addition to the share of discounted services, how will the library pay for computers, training, software, and support services that the E-rate does not cover? How will libraries know if the information technology investment is helping them reach their goals for library service? Libraries must also certify that they have funds budgeted and approved to meet their financial obligations to pay for the "non-discounted" portion of their requested services and to pay for the other components, set out in their technology plans, for the current funding year.
2. ***Submit a "Form 470 Request for Services."*** The application, submitted either in paper form or to the SLD web site, notifies the SLD of the services and/or equipment requested by the library. There are separate annual funding cycles allowing a 75-90 day window for the submission of Form 470s.
3. ***Collect bids from vendors and select sources through a competitive bidding process.*** The Form 470 submission starts a 28-day competitive bidding period. Libraries must wait at least 28 days from the date of the Form 470 before signing any contract or making other arrangements for new services. Libraries must follow their regular state or local competitive bidding processes or time frames.
4. ***Submit a "Form 471, Services Ordered and Certification."*** Applicants file a Form 471 to apply for E-rate discounts after service providers have been selected and contracts signed. This form may be filed as soon as the "window" for submission is opened by the SLD.
5. ***Receive notification from SLD of approved acquisitions.*** The SLD issues a Funding Commitment Decision Letter after review of the Form 471 application. This letter tells applicants the level of E-rate funding allocated for E-rate-eligible services. The SLD approves each requested service individually and assigns each a Funding Request Number. The SLD also notifies vendors of the approved funding commitment.
6. ***Implement services.*** The SLD disburses funds directly to the vendors after the library receives its contracted equipment or services.

See the SLD web site <<http://www.sl.universalservice.org/SLC>> for further information on program operations and the application process.

There have been a number of evaluations of the E-rate program for schools including Benton Foundation (2000, 2001), Congressional Research Service (1999), EdLiNC (1999 a and

b), General Accounting Office (GAO) (1998, 1999), and the Urban Institute for the U.S. Department of Education (2001, 2001a).

Preliminary Schools & Libraries Division Data Analysis

The study team, in conjunction with the American Library Association's Office of Information Technology Policy (OITP), analyzed E-rate data provided by the Schools and Library Division (SLD) of the Universal Service Administrative Company (USAC) to:

- Receive a usable E-rate data set for the analysis relevant to this study;
- Understand the construction of the database tables provided the study team by SLD;
- Run the analyses; and
- Verify the findings with both SLD/USAC staff and E-rate data posted on the SLD web site <<http://www.sl.universalservice.org/>>.

In the end, the process of obtaining permission to receive the data, negotiating the types of data desired for analysis purposes, clarifying the contents of the data tables, and verifying the results evolved over a period of 22 months (January 1999 through October 2001).²³

For analysis purposes, the study team sought basic E-rate data to answer a number of key questions. The study team developed the research questions based on the following: ongoing discussions with the ALA E-rate Task Force members; a key E-rate data forum conducted by the E-rate Task Force in January 1999, at which representatives from a number of data gathering agencies were present (National Telecommunications Information Agency, U.S. Department of Education, and the National Commission on Libraries and Information Science, to name a few); and, key library and policy individuals knowledgeable about data needs and the E-rate program.

Based on this process, the study team developed initially the following set of data analysis questions for the E-rate data:

- What are the discount amounts by state that libraries requested initially and received finally?
- What is the total amount, by state, of discount dollars requested but denied by the libraries?
- What are the types of eligible services, by state, that libraries requested for discounts?
- What is the disbursement of dollars, by state, relative to the percentage of library outlets within the state serving an area with high poverty levels?

As discussed in the section below, it was not possible to answer all of the above questions with the data provided the study team by SLD.

²³ Readers should note that USAC is a private, non-profit company and therefore does not make its E-rate data sets available to the public. The Federal Communications Commission (FCC) initially established both the Schools and Library Corporation to administer the E-rate application process and USAC to administer the E-rate program overall. The Schools and Libraries Corporation later became the Schools and Libraries Division of the USAC. The study team, through ALA's OITP, negotiated to receive selected E-rate application data through requests to the FCC.

Data Acquisition and Analysis Issues and Limitations

The data received and analyzed are for E-rate years two and three. Based on various interviews and data collection activities conducted by the study team, the consensus was that Year 1 E-rate data was problematic in general and reflected different application forms than years two and three in particular, thus not providing comparable data. Also, at the time that this study began the data seeking process, E-rate year 4 had not begun, nor had it completed by the time of receipt of the data. Overall, therefore, the data provide a very limited view of library E-rate discounts for E-rate years two and three. The study team stresses that these are E-rate year data. Previous data sets provided the study team were E-rate data by *calendar* year. Analysis on such data would mix E-rate year funding, as E-rate funding years crossed calendar years in most cases.

There are a number of factors that readers should consider while reviewing the data tables that appear in Appendix B:

- E-rate data reside within a very complex Microsoft Access database. Within that database, there are a number of data tables. The study team requested certain types of E-rate application-based data (e.g., initial discounts, received discounts, services requested, state, library/school designation, to name a few) and SLD provided the tables thought most appropriate to the data requested.
 - When a request is made by an outside party for some portion of that data it is not always a simple matter of extracting a few tables, putting them on a CD and delivering them to the client. Many tables in a system like this have complex linkages to other tables, and simply ignoring these connections can result in the researcher drawing wrong conclusions based on erroneous data. Indeed, the tables do not have a common set of applicant information against which to link or analyze. As such, analyzing the data required a number of data quality checks and corrections to ensure accurate analysis. The study team, with the assistance of SLD/USAC staff, conducted quality assessments to ensure as reliable analysis as possible. Still, there may be some differences with SLD-provided analysis versus that presented here. Appendix B provides complete descriptions of data tables received by the study team.
- It is difficult for researchers to analyze the number of requests for funding that a state generates. For example, a state may decide that it is going to make a small number funding requests for a larger number of libraries while another state may decide that each library is to make requests on its own. They may be equally successful in acquiring funds, but it is difficult to tell how many entities are affected.
- The data are *estimates* of library application and discount data. Schools, libraries, or school/library consortia (including state libraries and state-wide networks) can apply for discounts. Due to the construction of the data files, it is not possible to isolate library discounts within the school/library consortia category without reviewing each consortia application form. As such, the analysis presented focuses on the library applicant category only. This likely underreports overall library E-rate discounts received, as it is not known how many libraries participate in the consortia.

- The SLD database does contain a “building code” variable in which Department of Education school facility codes sometimes appear. There is no entry for libraries, however. As such, the National Center for Education Statistics library codes used by the Federal-State Cooperative System (FSCS) to identify specific public library systems and outlets do not exist in the database. Thus, it was not possible to properly identify applicant libraries and cross the E-rate data with other existing public library data (e.g., poverty such as used by Bertot and McClure, 2000, to determine Internet connectivity by geocoded library outlets). The study team could not, therefore, conduct library-based poverty analysis.
- The process of requesting E-rate funds can be quite lengthy in many cases. When a decision is made to coordinate the application process within a state, there can be many rounds of meetings to decide which groups will be involved. Will it be just libraries within a county? Will a group of counties coordinate together? Will the State library system coordinate for the entire state? Will a school system be involved? Will a library join with a group of schools? There are many possibilities to consider and planning meetings to coordinate. Once an application strategy is adopted and submitted, separate applications for the funding of services begins. Again, there are a number of different strategies possible to follow.

All of this is to point out that E-rate funding requests can take a considerable amount of time and resources to implement. Added to this timeline is the time it takes for applications to be reviewed and accepted at the national level. This elongated timeline can lead to inaccuracies or misleading analysis when snapshot copies of the E-rate database are extracted and analyzed. There are status codes to help the researcher know where in the process a particular request is, but they are not always easy to use when overall analysis is needed. For example, if an entire (large) library system applied and their application was sent in near the application deadlines, and delays were encountered due to technical problems with the paperwork, an analytical look at E-rate data early in the funding year may have given a very different picture than one month later.

- Finally, without the study team having a method for acquiring a thorough understanding of how the E-rate database is constructed, it is difficult to know what kinds of questions can be asked and answered accurately through analysis of E-rate data. It may be easy to evaluate the application forms and know the procedures for applying for E-rate services and formulate questions and hypotheses, but without knowing how the applications are stored and processed in the databases, it is difficult to know if it is possible to extract accurate evaluations.

While there are other issues that the study team encountered with the E-rate data, the above are key.

Readers should note that the above issues reflect a learning curve encountered by the study team while negotiating for E-rate data and once in receipt of the data. USAC and SLD staff provided assistance and support to the study team in its attempt to understand the database, individual data tables, and data linkages.

Key Findings from the Preliminary Schools & Libraries Division Data Analysis

First, a note on why the numbers presented are correct in the aggregate, but breakdown at the state level. The data tables that the study team received from SLD identified the applicants by their applicant type: school, library/library consortium, or consortium. The study team did not receive the tables that identified individual members of multi-type consortia, so could not identify libraries within those applicant types that received E-rate funding. As a result, the study team only analyzed E-rate data for the library/library consortium applicant type. In doing so, the study team generated aggregate E-rate discounts received by libraries/library consortia quite similar to those reported by SLD.²⁴ However, this does not present the full picture of what libraries receive in terms of E-rate discounts. Many libraries are included in applications submitted by multi-type consortia or as part of school E-rate applications. Two examples illustrate this:

- MOREnet (Missouri Research and Education Network, <http://www.more.net>) is a multi-type consortium that operates in Missouri. It has members – both school and library – that qualify for E-rate discounts and, as such, submits applications for these qualifying institutions. Correspondence with Tony Wening (Program Director and member of the ALA E-rate Task Force) indicates that an additional \$756,423.20 in Year 2 and \$1,350,034.09 in Year 3 attributable to Missouri libraries were received. These E-rate benefits were not reflected in the study team's analysis of library/library consortia E-rate discounts. Why? These additional dollars are contained within the consortium set of data to which the study team did not have access. The study team would need to know who belongs to the consortium and separate out library members.
- TEACH WISCONSIN is a state K-12 and library networking agency that files a statewide E-rate application for telecommunications line discounts for 700+ K-12 schools and libraries in the state of Wisconsin. Again, it appears in the consortium data table, as this is a multi-type entity that supplies telecommunications services to both schools and libraries. Correspondence with Robert Bocher (Library Technology Consultant at the Wisconsin Department of Public Instruction, State Division for Libraries) indicates that the amount of the discount for E-rate year 3 is \$481,000. However, it is unclear, and likely not ascertainable, to determine how much of the discount applies to libraries as distinct from schools.

Thus, the above illustrates the more modest difficulties in using the SLD data received by the study team to portray accurately E-rate data at the state level.

²⁴ Note that the actual figure reported for Year 2 by SLD is \$65,234,957.44 (see <http://www.sl.universalservice.org/funding/y2/national.asp>), compared to the \$64,995,723.51 reported by the study team's analysis. For Year 3, SLD reports \$66,001,235.14, compared to \$66,090,324.62 reported by the study team's analysis.

To facilitate reading the data tables presented in Appendix B, the study team presents the key findings from its analysis of E-rate data here. The findings are listed by table number as follows:

- **Tables B.1 and B.2, E-rate years 2 and 3 library funding committed.** Overall, libraries in the states and territories received approximately \$65 million in funding commitments during E-rate year 2 and \$66 million in funding commitments in E-rate year 3. In terms of sheer commitment totals, New York and Georgia received the most in commitments for both E-rate years, with New York receiving \$12,164,440 in E-rate Year 2 and \$15,439,444 in Year 3. Georgia received \$6,732,990 in Year 2 and \$5,298,414 in Year 3.
 - Georgia remained relatively successful when these commitments are viewed as a per capita ratio. Per capita spending in E-rate Year 2 ranged from a low of \$0.024 (New Mexico) to a high of \$0.842 (Puerto Rico). For E-rate Year 3, per capita spending ranged from a low of \$0.014 (South Dakota) to \$1.171 (Puerto Rico). The study team used 2000 census data to determine the estimated per capita commitments.
- **Tables B.3 and B.4, E-rate requested amounts and committed amounts for years two and three.** In Year 2, almost 80% of library E-rate discount requests received funding (nearly \$82 million in requests and approximately \$65 million in commitments). In Year 3 that number dropped to 61% (nearly \$109 million in requests and approximately \$66 million in commitments). Hawaii only received 11% of the funds they originally asked for in E-rate Year 2, but 79% the following year. Mississippi received almost everything they requested in Year 2 (99.5%) and received 77% of their Year 3 requests. Delaware led all states by receiving 97% of their requests in Year 3, having received just 68% the previous year.
 - A number of factors can contribute to the variation in requested and committed discounts. These can include libraries applying for ineligible E-rate discount items and improperly filed SLD E-rate forms. Other factors exist, thus, the study team cannot point to any systematic factors that contribute to the discrepancies between library discount requests and final commitment from SLD.
- **Tables B.5 and B.6, Total E-rate dollars requested but denied funding for years two and three.** Overall, SLD denied 1,692 E-rate discount requests for a total of \$11,756,290.43 in E-rate Year 2 and 1,972 requests for a total of \$29,942,471.16 in E-rate Year 3. The Year 2 per capita denial average was \$0.042 and climbed to \$0.106 in Year 3. There was an approximate 4.5% increase in applications for funds in Year 3, but a 15% increase in denials.
 - In Year 2, Michigan was denied funding for 72 of its requests which averaged to a \$0.175 per capita denial rate, the highest for that year.
 - California, the nation's most populous state, had a \$0.012 per capita denial rate in Year 2 and slipped to a \$0.065 rate the following year.
- **Tables B.7 through B.10, Types of E-rate services funded.** The most requested type of service in virtually every state in both years two and three was telecommunication services (phone bills). *Dedicated services* is a sub-category of internal connections through which the funding request specifically earmarked the funds for a particular library or group of libraries and did not cover the entire set of entities on the original application.

- There was a significant drop in the requests for internal connections from Year 2 to Year 3, indicating that many of the libraries had used prior year funds to get their buildings set up, and were now primarily using funds for connections.
- Combining the dedicated services and internal connection categories in Year 2 reveals a total of 3,081 funded requests for these services compared to only 323 in Year 3, an almost 90 percent drop (see Tables B.9 and B.10).

Further details can be examined in Appendix B.

Preliminary USAC/SLD E-rate Data Analysis Summary

There is a large amount of data reported in the tables presented in Appendix B. Overall, the data tables suggest that:

- Libraries received between 61% and 80% of their requested discounts for E-rate years two and three, though it is not clear as to the reasons for the denials;
- Libraries received around 3% of the total E-rate discounts for years two and three (according to SLD data on the SLD web site <<http://www.sl.universalservice.org/funding/y3/national.asp>>).
- States vary in their success at attaining E-rate discounts from year to year and on a per capita basis. It is not the case, in general, that larger states receive more E-rate discounts. Indeed many smaller states (as measured by population) are successful in their E-rate discount applications on a per capita basis.

The tables also indicate a variation in E-rate applications by states, E-rate discounts committed by states, and the types of services for which libraries applied through their E-rate applications. Specific variations can be identified by reviewing individual tables and states.

Bill & Melinda Gates Foundation, U.S. Library Program

The Bill & Melinda Gates Foundation U.S. Library Program <<http://www.gatesfoundation.org/libraries/uslibraryprogram/default.htm>> began in 1997²⁵ with the goal of expanding public access to computers, the Internet and digital information in State library certified public libraries that serve low-income communities. The program has made grants to more than 6,600 libraries in the United States, installed more than 28,000 PCs and trained 8,100 librarians as of November 2001 spending \$109,141,929.²⁶ The goal was to reach 10,000 libraries in 50 states by the end of 2003 with a total investment of \$250 million dollars.²⁷

²⁵ This is an outgrowth of Microsoft's "Libraries Online!" program that started in 1995 to bring computer access to the disadvantaged through public libraries.

²⁶ From Gates web page: <http://www.gatesfoundation.org/libraries/grants/default1.htm> Microsoft software contribution is probably not included in this total.

²⁷ Bill & Melinda Gates Foundation U.S. Library Program. (2001, February 21). Press release. <<http://www.gatesfoundation.org/pressroom/release.asp?PRindex=352>>.

The Gates Foundation grouped the states into four rounds of funding and implementation.²⁸ Two of the states participating in the site visit portion of the present study, Florida and Michigan, received Gates funding in the second round. The other study participants, Colorado and Pennsylvania, are in the third round of funding and implementation getting underway now. The program has evolved over time incorporating lessons learned while implementing each round of the grants.²⁹

The program had a two-step application process. First, the State library completes an application that includes identification of known public libraries in the state. The State library³⁰ applies to the foundation detailing state readiness, commitment to sustainability over time, and to establishing programs for reaching people who do not otherwise have access to computers and the Internet. Second, eligible public libraries submit applications. The eligibility standards for individual libraries within a state are:³¹

- Library building is within a state that has been accepted to participate in the U.S. Library Program;
- Library building is a public library recognized by the State library agency as a public library;
- Library building serves an area of greater than 10 percent poverty based on U.S. Census Department data for 1990;³² and
- Library building has not previously received a Bill & Melinda Gates Foundation grant.

States and libraries are given an opportunity to appeal the foundation's eligibility decisions.

Public library participants receive computers, networking equipment, Microsoft software (separately awarded), telecommunications services for Internet access, training and technical support³³ for library staff. The hardware and software configurations received depend on the

²⁸ First round: Alabama, Arkansas, Louisiana, Kentucky, Mississippi, New Mexico, and West Virginia. Second round (implemented 1999-2001): Arizona, California, Florida, Georgia, Idaho, Michigan, Montana, New York, Oklahoma, South Carolina, Tennessee, and Texas. Third round (implemented 2001-2002): Colorado, Hawaii, Illinois, Indiana, Maine, Minnesota, Missouri, North Carolina, North Dakota, Ohio, Pennsylvania, South Dakota, Vermont, Virginia, and Wyoming. Fourth round (implemented 2002-2003): Alaska, Connecticut, Delaware, Iowa, Kansas, Maryland, Massachusetts, Nebraska, Nevada, New Hampshire, New Jersey, Oregon, Rhode Island, Utah, Washington, and Wisconsin. Bill & Melinda Gates Foundation U.S. Library Program. FAQ. <<http://www.gatesfoundation.org/libraries/uslibraryprogram/relatedinfo/faq.htm>>.

²⁹ Bill & Melinda Gates Foundation U.S. Library Program. Evaluation of U.S. library programs. <<http://www.gatesfoundation.org/libraries/uslibraryprogram/evaluation/default1.htm>>. See also: Gordon, Margaret; Gordon, Andrew & Moore, Elizabeth. (2001, February 15). New computers bring new patrons. *Library Journal*, <<http://www.libraryjournal.com/gatesLibrary.asp>>. This first review of the program was done by the same principal investigators presently evaluating the program for the foundation.

³⁰ In earlier rounds the Gates Fund also involved a state public library leadership coalition in the process.

³¹ From the Bill & Melinda Gates Foundation U.S. Library Program. FAQ. <<http://www.gatesfoundation.org/libraries/uslibraryprogram/relatedinfo/faq.htm>>.

³² For information on the method used, see: Bill & Melinda Gates Foundation U.S. Library Program. *U.S. library program's determination of population served and poverty rates* <<http://www.gatesfoundation.org/libraries/uslibraryprogram/relatedinfo/whitepaperpoppov.htm>>.

³³ For further information on grantee support offered see:

<<http://www.gatesfoundation.org/libraries/uslibraryprogram/granteesupport/default1.htm>>.

needs of each library as assessed by the foundation. Each workstation provides assistance for visually and auditory impaired users based on consultation with the Washington Adaptive Technology Alliance (WATA). Each computer provides a Spanish Language profile. Training and technical support covers what to do before your computer arrives, how to use the application software provided, Internet applications, network administration and computer systems management.

Other Public Library Funding to Reduce the Digital Divide

While of substantial importance, LSTA, E-rate and Gates Family Foundation funding are not the only sources of funding for public library Internet services. Indeed, these funding sources are best viewed as pieces of the connectivity puzzle that serves to provide the resources needed for public libraries to reduce the digital divide. Other funding for public library Internet connectivity include:

- **State telecommunications funds.** Some states (i.e., Texas) adopted their own universal service fund mechanisms to assist schools and libraries to connect to the Internet. These funds serve to supplement and/or enhance connectivity in the state's schools and libraries.
- **One time or additional operating appropriations to the State library.** State governments provided one-time funds (e.g., to provide for initial purchase of Internet workstations) and added operating revenues (e.g., to support the purchase of statewide licensed databases) to state libraries that reduced the digital divide.
- **Industry, non-profit & foundation support.** Various computer and telecommunications companies have provided public libraries with critical support as they introduced the Internet to their communities. See for example, AOL Time Warner Foundation <<http://www.aoltimewarnerfoundation.org/>>.
- **Local government support.** The common assumption, yet to be tested fully, is that local governments will pick up the ongoing support, replacement and maintenance of Internet equipment and services introduced at public libraries. In some cases, public libraries have already been able to leverage federal and state funding at the local level to provide additional funding sources for Internet connectivity, services, and resources.
- **Partnerships and in-kind services.** A number of public libraries receive in-kind contributions and/or services from federal and state agencies, regional consortia, and Internet service providers (ISPs), to name a few. For example, the State library, state telecommunications agency and regional consortia may provide access to telecommunications services as well as online database subscription services. ISPs may provide libraries with Web hosting and e-mail services. County government may host library network services and maintain them. Libraries benefit tremendously from such in-kind services.
- **Local funding sources.** Local industry and individual donors have also played key roles in the provision of Internet resources and services.

There may be other connectivity sources available to public libraries, but the above are key funding sources. Together, each type of funding initiative can provide eligible libraries with a robust Internet connectivity program with workstations, communications equipment, facilities

upgrades, telecommunications services, software, database subscription services, furniture, and other necessary items.

The challenge for public libraries is to ensure that the digital divide is not a barrier to the use of the Internet. The digital divide is the gap between those who have access to the Internet and those who do not. The digital divide is a barrier to the use of the Internet because it prevents those who do not have access from using the Internet. The digital divide is a barrier to the use of the Internet because it prevents those who do not have access from using the Internet.

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CHAPTER 3: SITE VISITS

This chapter reports on site visits to more than fifty libraries in four states: Colorado, Florida, Michigan, and Pennsylvania involving interviews with over 100 library managers including the State librarian, senior State library staff, and public library managers. See Appendix C for a list of study participants. The goal of this portion of the study was to provide a snapshot of U.S. state and public library efforts to reduce the digital divide and the role of external national-level funding in that effort. Example site visit discussion questions were:

- How did public libraries make use of external national-level funds to develop their network resources and services and address a potential for a digital divide in their communities?
- What role did state libraries play?
- What next steps do state and public libraries plan that may benefit from external funding?

Other discussion questions evolved during the actual site visits.

Study Approach

The challenge was to present useful results and analysis to the library community, external funders, policy makers, and researchers to assist them as they made present and future management, funding, policy and research decisions. The study team could not conduct a study of the entire public library digital divide reduction effort throughout the U.S. given the project's funding and time constraints. Instead, the researchers chose to study four states' efforts intensively, looking for patterns and trends common to all that might be indicative of national trends or issues.

Site Selection

The researchers examined the literature and available data for guidance as to appropriate states to visit. The study team considered whether it was possible to identify the most and least successful states in terms of external national-level funding for public library digital divide efforts. Funding is only one factor in a successful effort to reduce the digital divide and funding at the state aggregate may not reflect what is occurring locally. Funding data could serve, however, as a fair indicator of public library interest, organization, and innovation. In the case of LSTA Grants to State Library Agencies, funding levels were known but funding for Internet services or digital divide reduction was not easy to isolate. In the case of E-rate, three approaches were considered:

- National Center for Educational Statistics (2000)³⁴ data on which state libraries applied for E-rate funding in Year 1: The division between successful and unsuccessful states seemed clear: the data indicated that some state libraries simply did not apply for Year 1 funding. Upon analysis however, many of the state libraries did not apply because the state departments of education were designated as the state coordinating agency for all E-rate funding (be it school or library), this was not reflected in the NCES data;
- SLD data on E-rate awards for 1999 by state: These data did not control for state population size (large states therefore were ranked higher whether successful or not); and
- SLD data on E-rate awards for 1999 by awards per population of legal service area by state: This data were often in direct opposition to the previously discussed SLD data, frequently ranking the states that had received the largest E-rate awards at the bottom.

The data were inconclusive, indeed contradictory, as to the success of states in being awarded E-rate discounts. None of these data offered a credible means of selecting states whose state or public libraries were more successful in reducing the digital divide.

The study team reluctantly concluded that it was not possible to select state participants based on their varied success in reducing the digital divide or even success in applying for or obtaining external funding to reduce the digital divide. In the absence of other compelling criteria, the principal criteria used to select the states were:

- **Funding and logistics limitations:** The study team limited site selection due to project funding and logistics to four states.
- **Geographic diversity:** Effort was made to select states from different parts of the country, and to include small, medium and larger states.
- **Readily accessible urban and rural libraries:** The researchers set as a minimum criterion that one urban and one rural library would be visited in each state.
- **Population mix:** There should be ready access to public libraries serving populations most likely to not have access to Internet services according to the literature and existing research.
- **Collection of Internet related statistics:** Had the State library collected useful statistics related to public library Internet related activities?
- **State library leadership role:** To what degree had the state libraries taken a leadership role in public library Internet activities and obtaining funding for these activities within the state?
- **Willingness to participate:** The study would make moderate demands on the state and public libraries involved in terms of time and staff commitment. The states chosen had to be willing to participate.
- **Study team knowledge of the state:** The researchers chose states with which the study team had recent state and public library experience. This factor allowed more states and

³⁴ NCES (2000, Appendix B) reporting 1999 fiscal year data indicates that thirty-six state library agencies were E-rate program applicants. This picture did not improve in fiscal year 2000 when 32 states and the District of Columbia were E-rate program applicants NCES (2001, Appendix B). However data obtained from SLD indicates that the NCES data under-reports state library agency participation. One reason may be that the NCES data does not identify state libraries that applied through their parent state departments of education.

more sites to be studied because of reduced time spent on logistics. This was deemed a factor due to the limited time the study team could spend in each state.

The combination of these factors results in the selection of the four states studied: Michigan, Colorado, Pennsylvania, and Florida.

Each state site visit lasted four days. One day was spent interviewing the state librarian; director of library development; specialists in E-rate, LSTA and federal funding; and, selected specialists in introducing Internet services to public libraries and evaluating these services (e.g., library consultants and district librarians). State library technology managers were interviewed where the State library provided statewide Internet services (e.g., statewide licensed database programs). Where possible, the study team interviewed E-rate fund specialists from the Department of Education. These personnel were most knowledgeable about questions related to the State library study objectives and had the widest view of the range of the state's public library's experience with altering the digital divide. The other three days were spent interviewing public library managers on site in their libraries or in a nearby host library.

The literature and available data also did not offer a credible means of choosing individual public libraries within each state that were representative, successful or not, in reducing the digital divide. Thus, the study team relied on the local knowledge of State library staff and the State library project liaison to select individual library participants within the state. The local selectors were briefed on the study's objectives and told that the researchers wished to visit one urban and one rural public library at minimum. Within these parameters, project liaisons from the states visited developed a range of selection criteria including:

- Innovative Internet services particularly to those who otherwise would not have them;
- Libraries viewed as representative or average libraries within the state;
- Libraries with expert staff in technology, grant writing, fiscal matters;
- Libraries located in likely settings with high poverty rates, illiteracy, or minority populations;
- Libraries with unusual (successful or less successful) E-rate or LSTA experiences,
- Articulate library staff;
- Willingness to participate in the study; and
- Combinations of the above criteria.

The study team interviewed public library directors, governing board members, grant writers, planners, evaluators, and technology managers at each public library visited. In small libraries this was often one person or included volunteers from the community. Host libraries were asked to arrange for a focus group held at the host library and to invite area public library directors or designates. In addition, State library representatives administered surveys prepared by the study team to district librarians in Pennsylvania and library technology officers in Florida. The libraries selected as a result of this approach were diverse in context and experience in reducing the digital divide.